AMENDMENTS TO THE CLAIMS:

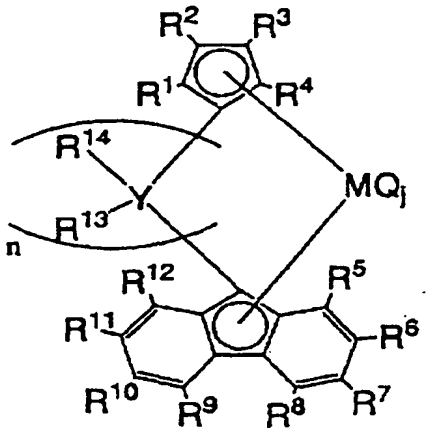
This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A process for preparing a low molecular weight olefin (co)polymer comprising homopolymerizing or copolymerizing an olefin in which ethylene is used as a main monomer, and in a temperature range of 100° to 250°C, in the presence of an olefin polymerization catalyst comprising:

(A) a Group 4 transition metal compound represented by the following formula (1), and

(B) at least one compound selected from the group consisting of (B-1) an organometallic compound, (B-2) an organoaluminum compound, (B-3) an organoaluminum oxy-compound, and (B-4) a compound that reacts with the Group 4 transition metal compound (A) to form an ion pair;



... (1)

wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, and R^{14} are independently selected from the group consisting of hydrogen, a hydrocarbon group, and a silicon-containing group, and are the same or different; and each adjacent pair of substituents R^1 to R^{14} may be taken together to form a ring, M is Ti, Zr or Hf; Y is a Group 14 atom; each Q is independently selected from the group consisting of: a halogen, a hydrocarbon group, a neutral conjugated or non-conjugated diene having 10 or fewer carbon atoms, an anionic ligand, and a neutral ligand that can be coordinated with a lone electron pair; n is an integer of from 2 to 4; and j is an integer of from 1 to 4; wherein an intrinsic viscosity [η] of the low molecular weight olefin (co)polymer measured in decalin at 135°C is 0.6dl/g or less.

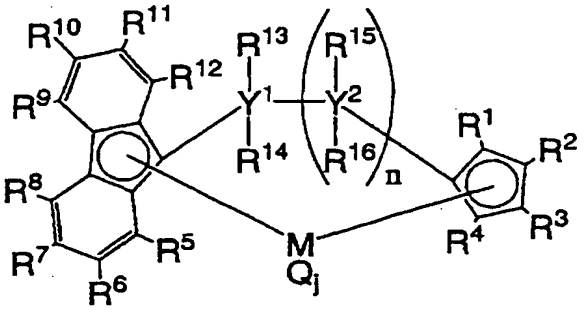
2. (Original) The process for preparing a low molecular weight olefin (co)polymer according to claim 1, wherein the intrinsic viscosity [η] of the low molecular weight olefin (co)polymer measured in decalin at 135°C is 0.4dl/g or less.

3. (Currently Amended) The process for preparing a low molecular weight olefin (co)polymer according to claim 1, wherein the low molecular weight olefin (co)polymer is obtained by homopolymerizing ethylene or copolymerizing ethylene which is a main monomer with one or more olefin(s) having 3 to 20 carbon atoms ~~, in an arbitrary combination, one or more olefin(s) having 2~~.

4. (Cancelled)

5. (Original) The process for preparing a low molecular weight olefin (co)polymer according to claim 1, wherein the Group 4 transition metal compound

represented by the formula (1) is a Group 4 transition metal compound represented by the following formula (1');



. . . (1')

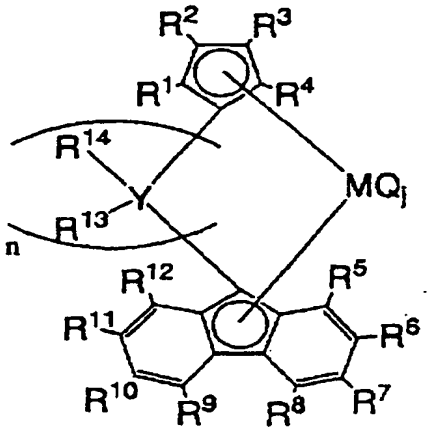
wherein R^1, R^2, R^3. R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11} and R^{12} are independently selected from the group consisting of a hydrogen atom, a hydrocarbon group, and a silicon-containing group, and are the same or different; R^{13}, R^{14}, R^{15} and R^{16} are a hydrogen atom or a hydrocarbon group; n is an integer of from 1 to 3 and when n is 1, not all of the groups R^1 to R^{16} are hydrogen atoms, and each of the groups R^1 to R^{16} may be the same or different; each adjacent pairs of substituents R^5 to R^{12} may be taken together to form a ring; R^{13} and R^{15} may be taken together to form a ring, or the pair of R^{13} and R^{15} and the pair of R^{14} and R^{16} may be taken together to form rings simultaneously; Y^1 and Y^2 are Group 14 atoms, and may be the same or different from each other, M is Ti, Zr or Hf; each Q is independently selected from the group consisting of a halogen, a hydrocarbon group, an anionic ligand and a neutral ligand that can be coordinated with a lone electron pair; and j is an integer of from 1 to 4.

6. (Original) The process for preparing a low molecular weight olefin (co)polymer according to claim 1, wherein an average residence time of the polymerization is 2 hours or less.

7. (Withdrawn) An olefin polymerization catalyst suitable for preparing a low molecular weight olefin (co)polymer by homopolymerizing or copolymerizing an olefin, which comprises:

(A) a Group 4 transition metal compound represented by the following formula (1), and

(B) at least one compound selected from the group consisting of (B-1) an organometallic compound, (B-2) an organoaluminum compound, (B-3) an organoaluminum oxy-compound, and (B-4) a compound that reacts with the Group 4 transition metal compound (A) to form an ion pair;



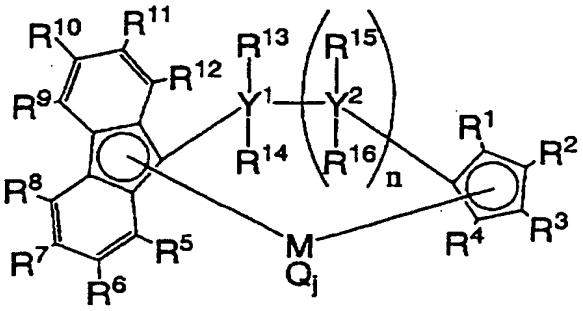
... (1)

wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, and R^{14} are independently selected from the group consisting of hydrogen, a hydrocarbon group, and a silicon-containing group, and are the same or different; and each adjacent pair of substituents R^1 to R^{14} may be taken together to form a ring; M is Ti, Zr or Hf; Y is a Group 14 atom; each Q is independently selected from the group consisting of: a halogen, a hydrocarbon group, a neutral conjugated or non-conjugated diene having 10 or fewer carbon atoms, an anionic

ligand, and a neutral ligand that can be coordinated with a lone electron pair; n is an integer of from 2 to 4; and j is an integer of from 1 to 4.

8. (Withdrawn) The olefin polymerization catalyst according to claim 7, wherein the Group 4 transition metal compound represented by the general formula (1) is a Group 4 transition metal compound represented by the said formula (1').

9. (Withdrawn - Currently Amended) A Group 4 transition metal compound represented by the following formula (1');



. . . (1')

wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11} and R^{12} are independently selected from the group consisting of a hydrogen atom, a hydrocarbon group, and a silicon-containing group, and may be the same or different; each of R^{13}, R^{14}, R^{15} and R^{16} is independently a hydrogen atom or a hydrocarbon group; n is an integer of from 1 to 3 and when n is 1, not all of the R^1 to R^{16} are hydrogen atoms, and each of the R^1 to R^{16} may be the same or different; each adjacent pair of substituents R^5 to R^{12} may be taken together to form a ring; R^{13} and R^{15} may be taken together to form a ring, or the pair of R^{13} and R^{15} and the pair of R^{14} and R^{16} may be taken together to form rings simultaneously; each of Y^1 and Y^2 is a Group 14 atom,

and may be the same or different; M is Ti, Zr or Hf; each Q is independently selected from a group consisting of halogen, a hydrocarbon group, an anionic ligand and a neutral ligand that can be coordinated with a lone electron pair; and j is an integer of from 1 to 4 **[[ ]]]**.

10. (Withdrawn) The Group 4 transition metal compound according to claim 9, wherein n is 1 or 2, and each of Y^1 and Y^2 is a carbon atom or a silicon atom, in the formula (1').

11. (Withdrawn) The Group 4 transition metal compound according to claim 9, wherein two or more of the substituents R^6, R^7, R^{10} and R^{11} are hydrocarbon groups having 1 to 20 carbon atoms, in the formula (1').

12. (Withdrawn - Currently Amended) The Group ~~group~~ 4 transition metal compound according to claim 9, wherein R^6 and R^7 are taken together to form an aliphatic ring, and R^{10} and R^{11} are taken together to form an aliphatic ring, in the formula (1').

13. (New) The process of claim 1, wherein the homopolymerizing or copolymerizing is conducted within a temperature range of 130° to 200°C.

14. (New) The process of claim 3, wherein the homopolymerizing or copolymerizing is conducted within a temperature range of 130° to 200°C.